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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,163	07/30/2001	Sunghyun Choi	US 010342	2123

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EXAMINER

CHUNG, PHUNG M

ART UNIT PAPER NUMBER

2133

DATE MAILED: 12/18/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/918,163

Applicant(s)

CHOI, SUNGHYUN

Examiner

Phung M. Chung

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on preliminary amendment dated on 4/8/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (6,084,888) in view of Fischer (6,640,325) and Falahati et al (XP-10353427 "Hybrid Type-II ARQ Schemes with Adaptive Modulation Systems for Wireless Channels" Pgs. 2691-2695, IEEE 1999.

As per claims 1-3, 6-7, Watanabe et al disclose an improve transmission efficiency of a communication system for forming a transmission frame from a plurality of packets to perform communications using the transmission frame, comprising: transmitting a sequence of packets from a source node to a destination node, each packet in the sequence having a plurality of payload blocks (col. 3, lines 23-24 and col. 4, lines 11-15 and 27-28). Watanabe et al do not specifically disclose the steps of: determining whether at least one of the plurality of the payload blocks within a particular packet is lost in the transmission; accepting the packet that are successful received of the particular packet and requesting for retransmission of the particular packet containing the lost payload block to the source node. However, Fischer discloses determining whether at least one of the plurality of the payload blocks within a particular packet is lost in the transmission; accepting the packet that are successful received of the particular packet and requesting for retransmission of the particular packet

Art Unit: 2133

containing the lost payload block to the source node (abstract; col. 2, lines 24-33 and col. 3, line 11-14). Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the steps of determining whether the data payload is lost in the transmission and accepting the packet that transmitted successfully and requesting for retransmit the data packet that lost in the transmission as touch by Fischer into the invention of Watanabe et al to recover data lost in transmission. Watanabe et al and Fischer do not disclose combining the stored payload blocks with the lost payload block retrieved from the subsequent transmission. However, Falahati et al combining the stored payload blocks with the retransmitted block. (See pg. 2692, col. 1, lines 8-15). Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the step of combining of the stored payload blocks with the lost payload block retrieved from the subsequent transmission of Falahati et al into the invention of Watanabe et al and Fischer to improve the performance in bad channel conditions.

As per claim 4, the teaching of Watanabe et al, Fischer and Falahati have been discussed above. Further, Watanabe et al disclose FEC for performing error correction to recover the lost payload block. (See col. 1, lines 40-43).

As per claims 15-16, these claims are also rejected under the same rationale as set forth in claim 1.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al , Fischer and Falahati as applied to claims 1 and 4 above, and further

in view of Decker "An Adaptive Type II hybrid ARQ/FEC Protocol suitable for GSM"
1994, IEEE pgs. 330-333.

As per claims 5, the teaching of Watanabe et al, Fischer and Falahati have been discussed above. They do not specifically disclose if the error correction fails, performing steps (c) through (e). However, Decker discloses if a received code word is erroneous, the receiver tries to correct the errors using the FEC code. If no remaining error is detected, the code word is delivered to the user. Otherwise the receiver requests a retransmission of the code word. Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teaching of Decker into the invention of Watanabe et al, Fischer and Falahati to provide higher reliability FEC system.

4. Claims 8-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (6,084,888), Fischer (6,640,325) and Falahati et al (XP-10353427 "Hybrid Type-II ARQ Schemes with Adaptive Modulation Systems for Wireless Channels" Pgs. 2691-2695, IEEE 1999 and further in view of Kwon et al (6,594,262).

As per claims 8-10 and 14, the teaching of Watanabe et al Fischer and Falahati et al have been disclosed above. They do not specifically disclose the steps of decoding each encoded signal to generate decoded frame; and demodulating the encoded signal. However, Kwon et al disclose such decoding encoded signals to generate decoded frames; and demodulating the encoded signals. (See col. 1, lines 36-60, col. 2, line 64 to col. 3, line 2 and col. 5, lines 5-30). Therefore, it would have been obvious to a person of ordinary skill in the

art, at the time the invention was made, to incorporate the decoding step of Kwon et al into the invention of Watanabe et al , Fischer and Falahati et al to protect the head of ATM cell from burst error.

As per claim 11, Kwon et al further disclose wherein encoded signals include employing a Reed-Solomon block coder. (col. 2, line 64 to col. 3 line 1).

As per claim 12, Watanabe et al further disclose FEC for performing error correction to recover the lost payload block (col. 1, lines 40-43).

As per claims 17 and 19, these claims are also rejected under the same rationale as set forth in claims 8 and 10.

As per claim 18, this claim is also rejected under the same rationale as set forth in claim 12.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al , Fischer, Falahati et al and kwon et al as applied to claims 8-12 and 14 above, and further in view of Decker "An Adaptive Type II hybrid ARQ/FEC Protocol suitable for GSM" 1994, IEEE pgs. 330-333..

As per claim 13, the teaching of Watanabe et al, Fischer, Falahati et al and Know et al have been discussed above. They do not specifically disclose if the error correction fails, performing steps (c) through (e). However, Decker discloses if a received code word is erroneous, the receiver tries to correct the errors using the FEC code. If no remaining error is detected, the code word is delivered to the user. Otherwise the receiver requests a retransmission of the code word. Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to

Art Unit: 2133

incorporate the teaching of Decker into the invention of Watanabe et al, Fischer and Falahati to provide higher reliability FEC system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phung M. Chung whose telephone number is 703-305-9686. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.



PHUNG M. CHUNG
PRIMARY EXAMINER